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September 22, 2016

*Electronic Submission*

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Portals II, Room TW-A325  
Washington, DC 20554

**Ex Parte Submission**

**RE: Transition from TTY to Real-Time Text Technology, GN Docket 16-145; Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology and Petition for Waiver of Rules Requiring Support of TTY Technology, GN Docket No. 15-178**

Dear Ms. Dortch:

On September 12, 2016 Linda Vandeloop of AT&T presented the attached information during a panel at the NASRA Conference in Annapolis, MD. FCC members were present.

In accordance with section 1.1206(b)(2) of the Commission's rules, this letter is being filed electronically with your office. Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Linda Vandeloop". The signature is written in a cursive, flowing style.

cc: Karen Peltz Strauss

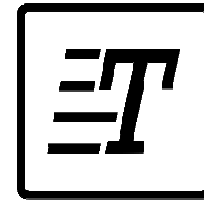
# AT&T

## Real-Time Text (RTT) Update

September, 2016



# What is Real-Time Text (RTT)?



Real-time text (RTT) is a text-based mode of communication where each text character appears on the receiving device at roughly the same time it is typed on the sending device, allowing for a conversational flow of communication, simultaneously with voice

RTT is the Internet Protocol (IP)-based, functionally equivalent successor to TTY technology that makes telephone service accessible to individuals with hearing and/or speech disabilities



# Why are we talking about RTT?

**The IP transition is bringing new voice services and capabilities to the market. . .**

## **Voice is now data**

- Voice over LTE – VoLTE
- Voice over WiFi
- AT&T announced that it will deploy a new fixed wireless local loop broadband service to about 13 million largely underserved, rural customer locations in connection with the AT&T-DIRECTV merger

## **IP data platforms bring capabilities to combine voice and text**

- TTY does not work reliably in these environments (see: EAAC report, March 2013)
- Instead of using an in-voice-band text solution (TTY), text is kept as text and transmitted over the data network along with the voice call



# Comparison of TTY and RTT

Characteristic	TTY	RTT
Voice and text in real time, simultaneously (VCO/HCO)	Yes	Yes
Character-by-character	Yes	Yes
Standards-based	Yes	Yes
Full duplex	No	Yes
Works over various access technologies	No	Yes
Internal keyboard	No	Yes
Resilient to IP network conditions	No	Yes
Efficient use of network resources	No	Yes
Foreign language and special characters	No	Yes
Support for users with hearing/speech disabilities	Assistive Technology	<b>Accessible Technology</b>



# Benefits of RTT

- A. An RTT user will be able to reliably reach any 911 Public Safety Answering Point (PSAP) in the U.S. and have a voice/text call
  - All PSAPs are equipped with TTYs today
  - All AT&T RTT users will have RTT-TTY interoperability
  - Over time, PSAPs will adopt NG-911 enabling RTT-to-RTT 911 calling
  - RTT will be real-time and QoS-managed, not best effort like SMS
- B. Anyone with hearing loss or a speech disability will be able to call anyone with an RTT-enabled device or TTY and have a voice/text call
  - Will need interoperability between service providers
  - Will reduce the need for TTYs and perhaps Relay Services



# FCC RTT NPRM - Overview

- Adopted July 28, 2016 – Comments filed July 11, 2016, Reply Comments filed July 25, 2016.
- RTT must be interoperable across networks and devices. This may be achieved through adherence to RFC 4103, as a “safe harbor” standard.
- RTT must be backward compatible with TTY until the Commission determines TTY is no longer necessary.
- Wireless services and equipment capable of sending, receiving and displaying text must support specific RTT functions, features, and capabilities necessary to ensure that people with disabilities have accessible and effective text-based communications service.



# FCC NPRM - Proposed Timelines

- Tier 1 wireless providers and manufacturers – December 31, 2017
- Non-Tier 1 wireless providers and manufacturers – the Commission seeks comment on appropriate timeline
- End User Devices – handsets sold after 12/31/17 have RTT capability. Should the deadline apply to the manufacture date rather than the date the device is available to the public?
- Should there be a requirement to add RTT capability to devices already in service? By what date should such device be made compatible with a stand-alone RTT device or app to the extent that these become available?
- Should over-the-top applications or plug-ins be permitted as an interim measure only and if so how long? Should manufacturers and service providers be required to pre-install?



# AT&T's Action Plan

- AT&T actively participates in standards setting bodies.
- AT&T is developing RFC 4103-based real-time-text (“RTT”) to deliver enhanced, interoperable disability access over IP-based networks.
  - Early implementation is likely to be an over-the-top app that provides voice and RTT
  - Long term RTT implementation will be a standards-based solution native to the device
- AT&T is working with vendors to support RTT.
- Extensive testing is planned.
- AT&T files bi-annual status reports summarizing the RTT progress.



# Status of US Standards Work

- ATIS (Alliance for Telecommunications Industry Solutions) is working on multiple U. S. national standards for RTT:
  - ATIS-1000068 (published Oct-2015): “Support of TTY Service over IP using Global Text Telephony” (i.e., requirements for the network)
  - In development: “Real Time Text Mobile Device Behavior Specification” (i.e., requirements for the phone)
    - This spec is currently undergoing an industry 30-day letter ballot review that ends on Sept. 6, 2016. If there are any technical changes agreed by ATIS as a result of the ballot comments, the document must undergo another 30-day ballot review ahead of publication. Publication is anticipated in October, 2016.
  - In development RTT End-to-End Service Description spec with anticipated completion in 4Q2016



# AT&T RTT Status

- AT&T has reached agreements with vendors for
  1. An Over the Top RTT application
  2. Software upgrades needed to support the OTT RTT application and for the delivery of virtual media resource functions that will be used for the backward compatibility functionality
- Initial versions of the OTT RTT application, network software upgrades, and virtual media resource functions are expected in AT&T Labs for testing sometime in 3<sup>rd</sup>Q 2016.
- AT&T expects to reach agreements with mobile device manufacturers to provide an RTT solution embedded within mobile devices after standards have been developed followed by testing of the embedded solution



# Testing

## Application and Software AT&T Labs Testing

- Performed over multiple network configurations and include, among other activities, analysis of E911 and 711 capabilities, backward compatibility functions, RTT-to-RTT calls, authentication, IP Multimedia subsystem (IMS) registration, integrated dialer capabilities, and administrative processing and rating of RTT sessions
- Subsequent software releases will be developed based upon the test feedback provided and will also be subjected to further testing.

## Friendly User Test Objectives – Targeted for 2<sup>nd</sup> Q 2017

- Assess whether RTT functionality will meet the needs of the primary audience
- Test drive to help level set the RTT experience with the communities for persons with disabilities
- Identify User Interface design bugs (minor)
- Includes Braille screen reader testing



# RTT Product Implementation

## Accessibility Solutions

### Downloadable Over-The-Top App

- Launch date – December 2017
- Free download from Accessibility Resources on att.com
- Current software versions for Android (6.0), iOS (9.0) and Windows (10.0) will be supported
- RTT user interface will include its own soft keyboard
- Usable with device's accessibility features and with refreshable braille displays

### Embedded in Native Dialer

- Launch timing – Targeted for 2018 (but could change depending on manufacturer timeline)
- Long term RTT solution will be embedded within the device's native dialer software
- Specific AT&T branded devices will be identified pending discussions with device manufacturers
- Fixed Wireless customers will continue to use the app once the native embedded solution is in place



# Questions??

